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ADVANCED MICRO DEVICES, INC.
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EXAMINER

VAN HANDEL, MICHAEL P

ART UNIT	PAPER NUMBER
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2623

MAIL DATE	DELIVERY MODE
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06/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/923,768

Applicant(s)

CALLWAY ET AL.

Examiner

Michael Van Handel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-20 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-20, 24-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/14/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/14/2007 has been entered.

Response to Amendment

1. Applicant's arguments regarding claim **20**, and some of applicant's arguments regarding claim **25**, filed 3/14/2007, are considered moot in view of a reinterpretation of the Hannah reference.
2. This action is responsive to an Amendment filed 3/14/2007. Claims **10-20, 24-30** are pending. Claims **10, 14, 15** are amended. Claims **1-9, 21-23** are canceled. Claims **26-30** are new.

Response to Arguments

1. Applicant's arguments regarding claims **10, 15, 20**, and **24-30**, filed 3/14/2007, have been fully considered, but they are not persuasive.

Regarding claims **24, 26**, and **27**, the applicant argues that the claim requires sending graphics rendering commands, also referred to in the Specification as drawing commands, which

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are not MPEG video processing commands, as known in the art. The examiner respectfully disagrees. Motion vectors stored in video encoding describe how a video receiver should render an image. Hannah illustrates this in the example of compressing a motorcyclist object 174c in a sequence of video frames. Since the motorcyclist object is likely to move to a different set of macroblocks in successive frames of the image, a macroblock 172 of a video frame 170 may be compared to macroblocks 172 in both previous frames and subsequent frames, looking for a matching image, such as the motorcyclist object 174c. Once found, a representation of the movement of the object, known as a motion vector, may be stored in lieu of a complete representation of the motorcyclist object 174c (col. 4, l. 44-52 & Fig. 2). Hannah further describes replacing real color values for blocks with frequency coefficients describing color variations in the block (col. 3, l. 40-50). Hannah still further describes a situation, which includes graphics-only elements. Since graphic elements are usually created by means of high-level display lists of commands, the motion vector hints 108 may include data structures for handling movement of the graphics elements. For example, text, which is scrolled upwards is accompanied by a data structure of motion vector hints 109 containing an upward pointing vector field of the correct magnitude (col. 7, l. 40-48). Hannah also states that, for three-dimensional graphics, objects are supplemented with motion vectors projected onto the screen coordinate system (col. 7, l. 49-51). Since motion vectors in the compressed video stream describe how a video receiver should render an image, the examiner maintains that Hannah teaches sending graphics rendering commands, as currently claimed.

Regarding claim 10, the applicant argues that the added language is inherent and that Hannah does not disclose encoding graphics image data independent of video image data. The

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examiner respectfully disagrees. See the rejections of claims 10-14, 29, and 30 under 35 USC 112 below.

Regarding claims **25** and **28-30**, the applicant argues that Hannah fails to describe a second apparatus that wirelessly receives drawing commands to produce rendered graphics data and decompresses the recompressed video stream and combines the rendered graphics image data that was based on the wirelessly received drawing commands, with the decompressed video stream to produce frames of image data as claimed. The examiner respectfully disagrees. Hannah discloses enhancing a video stream with graphics, re-encoding the video stream, and transmitting the video stream to a remote display (col. 2, l. 20-34) inside the home without the need for a cable connection (col. 5, l. 46-53). With regard to the compression of the video stream, Hannah discloses replacing real color values with frequency coefficients describing color transitions (col. 3, l. 41-50), creating representations of motions of video and graphical objects within the video stream using motion vectors (col. 4, l. 44-52; col. 7, l. 40-48; & Fig. 2), and supplementing objects with motion vectors projected onto the screen coordinate system for three-dimensional objects (col. 7, l. 49-51). As such, the examiner interprets Hannah as disclosing the transmission of drawing commands to the remote display. Hannah still further discloses displaying MPEG-2 content and graphical elements on the remote display (col. 5, l. 54-57). The examiner notes that it is inherent that the video stream be decompressed and the graphics and video data combined in the decoding process for display on the remote display. As such, the examiner maintains that Hannah teaches a second apparatus that wirelessly receives drawing commands to produce rendered graphics data and decompresses the recompressed video stream and combines the rendered graphics image data that was based on the wirelessly received

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drawing commands with the decompressed video stream to produce frames of image data, as currently claimed.

Regarding claim 15, the applicant argues that Hannah does not disclose first and second processors coupled to a frame buffer, wherein the first processor processes drawing commands and the second processor encodes the retrieved rendered graphics image data. The examiner respectfully disagrees. Hannah discloses a processor 302 coupled to a memory 308. The memory 308 contains a software program 200 executed by the processor, part of which includes the enhancement block 104 (col. 8, l. 47-61 & Fig. 6). The examiner interprets the processor 302 as being a first processor, which processes drawing commands. Hannah further discloses an MPEG encoder/decoder 330, which may assist the software program 200 in performing the operations described in the flow diagram of Fig. 5 (col. 9, l. 19-22). The examiner interprets the MPEG encoder/decoder 330 as being a second processor that encodes the retrieved rendered graphics image data. Thus, the examiner maintains that Hannah teaches first and second processors coupled to a frame buffer, wherein the first processor processes drawing commands and the second processor encodes the retrieved rendered graphics image data, as currently claimed.

Claim Rejections - 35 USC § 112

1 The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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2. Claim 10-14, 29, and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Referring to claims 10-14, 29, and 30, the applicant has amended claims 10, 29, and 30 to recite "independent of a video stream;" however, the examiner fails to find adequate support in the specification for the amended claim language. The applicant's specification discloses that full video image frames are decompressed and then recompressed, such as via a software data encoder, such as an MPEGII or MPEG4 encoder, or any other suitable encoder, and then modulated by a short range wireless transceiver to a short range wireless mother unit having a local display (p. 5, l. 10-15). The applicant's specification further details that rendered graphics data may be blended with the decompressed video image frames to combine the two into suitable image frames (p. 6, l. 9-15, 23-28). A multiplexing circuit 140 is operatively coupled to an output of the blending circuit to receive image frames that are produced by blending rendered graphics data and decoded video (p. 7, l. 4-6). If the wireless display mode has been selected, control bits will control the multiplexer to select output frames from the blending circuit to be input to the video capture port, which stores decoded video (with graphic) frames in the frame buffer (p. 7, l. 13-16 & p. 10, l. 4-13). A data encoder 110 carries out MPEG encoding on the image frames 133 output by the blending circuit 132 and stored via the video capture port during the wireless display select mode. Accordingly, the data encoder 110 encodes the rendered graphics data and the decoded video that have been suitably blended to produce compressed

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image frames 145 containing recompressed video with encoded graphics data. The data encoder 110 recompresses the video (and compresses the rendered graphics data since it is in the same stream as the video). The data encoder is operatively coupled also to the short range wireless transmitter. The short range wireless transmitter transmits the encoded rendered graphics data and recompressed decoded video, which is in the form of suitable modulated compressed frames (p. 7, l. 19-31 & p. 8, l. 1-3). The applicant's specification states that the data encoder may be a hardware-based MPEG encoder, such as an MPEG-4 encoder (p. 8, l. 6-11, 15-16). The examiner acknowledges the example discussed with reference to Figure 3, which is in reference to a data stream in which no video is present, such as word processing programs, 3D games, etc. In this situation, the resulting stream that is encoded will not include video (p. 10, l. 23-31; p. 11, l. 1-13; & fig. 3); however, all of claims 10-14 require a video stream. In a situation where both video and graphics are sent, such as in Figure 4, the graphics data and decompressed video are encoded together (p. 11, l. 15-31; p. 12, l. 1-12; & Fig. 4). Thus, the examiner finds inadequate support for the amended claim language. For purposes of addressing the claim in the Office Action below, the examiner interprets "independent of a video stream" to mean using a different technique to encode frames containing graphics elements in a video stream from the techniques used to encode video elements in a video stream.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **10-19, 24-30** are rejected under 35 U.S.C. 102(e) as being anticipated by Hannah.

Referring to claims **10** and **15**, Hannah discloses a method for providing image data for a wireless display comprising:

- processing rendering commands to produce rendered graphics image data and storing the rendered graphics image to a frame buffer (the examiner notes that a frame buffer is inherent to the enhancement block 104, since the enhancement block 104 derives motion vector hints and generates an enhanced image 114 based upon an enhancement made to an original image)(col. 2, l. 13-24, 50-67; col. 3, l. 1-67; col. 4, l. 1-67; col. 5, l. 1-67; col. 6, l. 58-64; col. 7, l. 29-48; & Figs. 4, 6);
- retrieving the rendered graphics image data from the frame buffer via a local bus and encoding the retrieved rendered graphics image data (col. 2, l. 66-67; col. 3, l. 1-2, 5-16; col. 7, l. 29-39) independent of a video stream to produce encoded graphics image data (the examiner notes that video frames may include graphics-only elements. The examiner interprets such frames as being encoded independent of a video stream)(col. 7, l. 40-48); and
- sending the encoded graphics image data to a short range wireless receiver using a short range wireless transmitter (the examiner notes that a short range wireless transmitter and a short range wireless receiver are inherent to re-broadcasting MPEG-2 transmissions to remote displays without the need for a cable connection)(col. 2, l. 28-32; col. 3, l. 1-2, 5-16; col. 5, l. 46-53; & col. 9, l. 30-36).

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Referring to claims 11 and 16, Hannah discloses the method of claims 10 and 15, respectively, comprising:

- decompressing a compressed video stream to produce a decompressed video stream (col. 2, l. 20-22, 38-48);
- recompressing the decompressed video stream to produce a recompressed video stream (col. 2, l. 30-34; col. 3, l. 1-2, 5-16); and wherein sending the encoded graphics image includes sending the recompressed video stream using the short range wireless transmitter (col. 2, l. 20-34, 66-67; col. 3, l. 1-2, 5-16; col. 4, l. 7-8; col. 5, l. 60-63; & col. 7, l. 29-63).

Referring to claims 12 and 17, Hannah discloses the method of claims 11 and 16, respectively, comprising:

- combining the rendered graphics image data with the decompressed video stream to produce frames of image data (col. 2, l. 13-67 & col. 3, l. 1-2, 5-16);
- storing the frames of image data in the frame buffer prior to recompressing (see examiner's note regarding the frame buffer in claim 10 above); and
- retrieving the frames of image data for recompression (col. 2, l. 66-67; col. 3, l. 1-2, 5-16; col. 7, l. 29-39).

Referring to claims 13 and 18, Hannah discloses the method of claims 10 and 15, respectively, comprising locally displaying the rendered graphics image data on a local display (col. 2, l. 35-48 & Fig. 1).

Referring to claims 14 and 19, Hannah discloses the method of claims 12 and 15, respectively, comprising:

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- receiving, by the wireless display, a compressed video stream containing graphics and recompressed video (the examiner notes that this is inherent to Hannah, since it is required for reception of the transmitted graphics and video)(col. 2, l. 28-34; col. 3, l. 1-2, 5-16; & col. 5, l. 46-57);
- decompressing the received compressed video stream by the wireless display and producing decompressed image frames (the examiner notes that this is inherent to Hannah, since the received compressed video stream must be decompressed in order to view the content); and
- displaying the decompressed image frames on the wireless display (col. 5, l. 54-57).

Referring to claim **20**, Hannah discloses the method of claim 15 comprising wirelessly sending drawing commands to a short range wireless receiver (the examiner notes that Hannah discloses sending motion vectors describing the color, dimension, and motion of objects in a video stream)(col. 3, l. 40-50; col. 4, l. 44-52; col. 7, l. 40-51; & Fig. 2).

Referring to claim **24**, Hannah discloses a method for providing image data for a wireless monitor comprising:

- decompressing, by a first apparatus, a compressed video stream to produce a decompressed video stream (col. 2, l. 20-22, 38-48);
- recompressing the decompressed video stream to produce a recompressed video stream (col. 2, l. 30-34; col. 3, l. 1-2, 5-16);
- sending the recompressed video stream wirelessly and sending graphics rendering commands wirelessly to be processed remotely (the examiner notes that motion vectors are transmitted in the video stream and used in decoding and decompressing

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the video images. The examiner interprets these to be graphics rendering commands)(col. 2, l. 20-34, 66-67; col. 3, l. 1-2, 5-16, 36-40; col. 4, l. 7-8; col. 5, l. 60-63; & col. 7, l. 29-63).

Referring to claim **25**, Hannah discloses the method of claim 24 comprising:

- processing, by a second apparatus, wirelessly received graphics rendering commands to produce rendered graphics data (the examiner notes that this is inherent to Hannah, since it is required for reception of the transmitted graphics and video)(col. 2, l. 28-34; col. 3, l. 1-2, 5-16; & col. 5, l. 46-57); and
- decompressing the recompressed video stream and combining the rendered graphics image data with the decompressed video stream to produce frames of image data (the examiner notes that this is inherent to Hannah, since the received compressed video stream must be decompressed in order to view the video and graphics content).

Referring to claims **26** and **27**, Hannah discloses a method/apparatus for processing graphics and video comprising:

- recompressing a received compressed video stream to produce a recompressed video stream (col. 2, l. 30-34; col. 3, l. 1-2, 5-16); and
- transmitting wirelessly said recompressed video stream with graphics rendering commands (the examiner notes that motion vectors are transmitted in the video stream and used in decoding and decompressing the video images. The examiner interprets these to be graphics rendering commands)(col. 2, l. 20-34, 66-67; col. 3, l. 1-2, 5-16, 36-40; col. 4, l. 7-8; col. 5, l. 60-63; & col. 7, l. 29-63).

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Referring to claim 28, Hannah discloses a method for providing image data for a wireless display comprising:

- receiving, via a short range wireless receiver, a recompressed video stream and graphics rendering commands (the examiner notes that this is inherent to Hannah, since it is required for reception of the transmitted graphics and video without a cable connection)(col. 2, l. 28-34; col. 3, l. 1-2, 5-16; & col. 5, l. 46-57);
- decompressing the received recompressed video stream to produce decompressed image frames and processing the wirelessly received graphics rendering commands to produce rendered graphics image data (the examiner notes that this is inherent to Hannah, since the received compressed video stream must be decompressed and processed in order to view the video and graphics content); and
- displaying the decompressed image frames and graphics image data on a local display (col. 5, l. 54-57).

Referring to claim 29, Hannah discloses a wireless display system comprising:

- a first unit operative to:
 - o process rendering commands to produce rendered graphics image data and store the rendered graphics image to a frame buffer (the examiner notes that a frame buffer is inherent to the enhancement block 104, since the enhancement block 104 derives motion vector hints and generates an enhanced image 114 based upon an enhancement made to an original image)(col. 2, l. 13-24, 50-67; col. 3, l. 1-67; col. 4, l. 1-67; col. 5, l. 1-67; col. 6, l. 58-64; col. 7, l. 29-48; & Figs. 4, 6);

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- retrieve the rendered graphics image data from the frame buffer via a local bus and encode the retrieved rendered graphics image data (col. 2, l. 66-67; col. 3, l. 1-2, 5-16; col. 7, l. 29-39) independent of a video stream to produce encoded graphics image data (the examiner notes that video frames may include graphics-only elements. The examiner interprets such frames as being encoded independent of a video stream)(col. 7, l. 40-48); and
- send the encoded graphics image data to a short range wireless receiver using a short range wireless transmitter (the examiner notes that a short range wireless transmitter and a short range wireless receiver are inherent to re-broadcasting MPEG-2 transmissions to remote displays without the need for a cable connection)(col. 2, l. 28-32; col. 3, l. 1-2, 5-16; col. 5, l. 46-53; & col. 9, l. 30-36); and
- a wireless display operative to:
 - receive, via a short range wireless receiver, the recompressed video stream and graphics rendering commands (the examiner notes that this is inherent to Hannah, since it is required for reception of the transmitted graphics and video without a cable connection)(col. 2, l. 28-34; col. 3, l. 1-2, 5-16; & col. 5, l. 46-57);
 - decompress the received recompressed video stream to produce decompressed image frames and process the wirelessly received graphics rendering commands to produce rendered graphics image data (the examiner notes that this is inherent to Hannah, since the received compressed video stream must

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be decompressed and processed in order to view the video and graphics content); and

- o display the decompressed image frames and graphics image data on a local display (col. 5, l. 54-57).

Referring to claim **30**, Hannah discloses a method in a wireless display comprising:

- receiving, by the wireless display, encoded graphics image data that was encoded independent of a video stream (the examiner notes that video frames may include graphics-only elements. The examiner interprets such frames as being encoded independent of a video stream)(col. 7, l. 40-48), using a short range wireless receiver (the examiner notes that this is inherent to Hannah, since it is required for reception of the transmitted graphics and video without a cable connection)(col. 2, l. 28-34; col. 3, l. 1-2, 5-16; & col. 5, l. 46-57);
- decoding the received encoded graphics image data (the examiner notes that this is inherent to Hannah, since the received compressed video stream must be decompressed and processed in order to view the video and graphics content); and
- displaying image frames containing the decoded graphics image data (col. 5, l. 54-57).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Van Handel whose telephone number is 571-272-5968. The examiner can normally be reached on 8:00am-5:30pm Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVH



SCOTT E. BELIVEAU
PRIMARY PATENT EXAMINER